

Taxonomic notes on *Acalolepta mixta* (Hope, 1841) and *Acalolepta vastator* (Newman, 1847) (Coleoptera: Cerambycidae)

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Abstract: *Acalolepta mixta* (Hope, 1841) is considered as a senior synonym of *Dihammus bispinosus* Breuning, 1935 syn. nov., *Acalolepta bispinosipennis* Breuning, 1969 syn. nov., *Acalolepta sumbawana* Breuning, 1969 syn. nov. and *Acalolepta savoensis* Breuning, 1979 syn. nov. *Acalolepta vastator* (Newman, 1847) bona species is removed from synonymy with *A. mixta* (Hope, 1841). The distribution of both species is updated and discussed.

Key words: Coleoptera, Cerambycidae, Lamiinae, Lamiini, *Acalolepta*, taxonomy.

Introduction

The enormous species richness of Australasian Lamiini, moreover dispersed on a huge surface and fragmented on different islands, has caused the description of many taxa, whose affinities were often underestimated. Stephan von Breuning (1894-1983) had the undeniable merit of providing the first worldwide keys to all species of Lamiinae; nevertheless, they were nearly exclusively based on the collection preserved in the Paris Museum. Moreover, the choice to use problematic characters (i.e. rapports cheeks/eye lobes and between antennomeres) and the rigidity of the schemas often led him to describe the same species more times, sometimes even in different genera. This situation markedly worsened already in the 1960's: the species were described summarily and compared with unrelated congeners, making impossible their identification without examining the types.

The photographs kindly provided by several colleagues through the Forum of the web-site www.cerambycoidea.com, including those of types preserved in different museums have allowed detecting many taxonomic mistakes.

In this paper, some taxa closely related to the Australian *Acalolepta mixta* (Hope, 1841) are examined, keeping the revision of this genus already treated in previous papers (Vitali 2016; 2017).

Abbreviations used in the text:

CFV – Collection Francesco Vitali, Luxembourg, Luxembourg;
MNHNP – National Museum of Natural History, Paris, France;
MNHNL – National Museum of Natural History, Luxembourg, Luxembourg;
OUMNH – Oxford University Museum of Natural History, United Kingdom.

Taxonomic part

***Acalolepta mixta* (Hope, 1841)** (Plate 125 figs 1-7)
Monohammus mixtus Hope, 1841: 48 (Australia, Northern Territory: Port Essington); Hope 1842: 428; Gahan 1893: 190.
Monohammus fistulator (Germar): Aulmann 1912: 20-21, fig. 15; 1913: 21-22, fig. 17 misidentification.
Monochamus mixtus (Hope): Aurivillius 1921: 98.
Dihammus bispinosus Breuning, 1935: 59 **syn. nov.** (Vietnam: Quang-Tri); 1944: 495.
Dihammus mixtus (Hope): Breuning 1944: 494–495; MacKeown 1947: 122; Duffy 1963: 164; Danilevsky & Kompantsev 1979: 230; Hawkeswood 1990: 100; Moulds & Bannink 2012: Tab. 1.
Acalolepta bispinosipennis Breuning, 1969: 664 **syn. nov.** (Indonesia: Sulawesi)
Acalolepta sumbawana Breuning, 1969: 664 **syn. nov.** (Indonesia, Lesser Sunda: Sumbawa)
Acalolepta savoensis Breuning, 1979: 100 **syn. nov.** (Indonesia, Lesser Sunda: Savu)



Acalolepta mixta (Hope): Vitali & Casadio 2007: 21, 23, Fig. 14; Goussey 2007: 641; Ślipiński & Escalona 2013: 39, 81-82.

Acalolepta mixtus (Hope): Chin et al. 2010: 10-11; Chin & Brown 2015: 1-2, figs 1-4 misspelling.

Examined material: *Monochammus mixtus* OUMNH: Syntype ♂, *mixta* / Hope N. A. (handwritten on a white label), TYPE (underlined) / Hope / Ann. Nat. / Hist. 1842 / P. 428 / Coll. Hope Oxon. (handwritten on a white label with red borders), TYPE COL 1823 1/3 / Monohammus / mixtus Hope / HOPE DEP: OXFORD (Plate 125 fig. 1).

1♀ MNHNL: [Australia], Queensland, acquisition 1925.

1♀ CFV: Solomon Is., Bellona, 7-III-1998, on a dry tree in day-time, C. A. Casadio lgt. (Plate 125 fig. 7).

Examined material: *Dihammus bispinosus* MNHNP: Holotype ♂, Quang-Tri / Annam (handwritten by Pic in a yellowish label), *Dihammus bispinosus mihi* Typ. det Breuning (handwritten by Breuning and printed on a white label), type (handwritten on a yellow label), Museum Paris / Coll. M. Pic (printed on a white label), HOLOTYPE (printed on a red label) (Plate 125 fig. 3).

Examined material: *Acalolepta bispinosipennis* MNHNP: Holotype ♀, Celebes M. (printed on a whitish label), *Acalolepta bispinosipennis mihi* Typ. Breuning dét. (handwritten by Breuning and printed on a white label), TYPE (printed on a red label) (Plate 125 fig. 4).

Examined material: *Acalolepta sumbawana* MNHNP: Holotype ♀, Sumbawa / Collfs (printed on a whitish label), *Acalolepta sumbawana mihi* Typ. Breuning dét. (handwritten by Breuning and printed on a white label), TYPE (printed on a red label) (Plate 125 fig. 5).

Examined material: *Acalolepta savoensis* MNHNP: Holotype ♂, Savu, I. / VIII-[18]96 / [A.] Everett (printed on a whitish label), *Acalolepta savoensis mihi* Typ. Breuning dét. (handwritten by Breuning and printed on a white label), TYPE (printed on a red label) (Plate 125 fig. 6).

Remarks: According to Wheeler (1911), the description of *Monohammus mixtus* appeared split in two numbers of the Proceedings of the Entomological Society of London: on 5th July (II) and on 1st November (III) 1841. The Proceedings from 1840 to 1846 were printed in ten sheets of 16 pages, which were distributed gratis to members and sold to the public. Their numbers were very scarce and the Society did not possess a single copy in 1911. Some museums bound them; however, they were reprinted in 1864 respecting the original state. According to Wheeler, the actual date “for all purpose of priority” for this description is 1st December 1841. Hope’s description stated: “*Caenosus, colore nigrescenti marmoratus; thorace spinoso punctis sparsim notatis; elytris bispinosis concoloribus; corpore infra grisescenti, tarsi supra, et infra auricomatis. Long. lin. 11*

[~23 mm], lat. lin. 3½ [~7.5 mm]” The type(s) came from Port Essington, a 19th century’s British settlement sited on the Cobourg Peninsula and still abandoned in 1849. It is located in Northern Territory, not in Queensland as Breuning (1944) claimed. The species is well characterised since the apex of each elytron is armed with two spines (“*elytris bispinosis*”). Moreover, the scape is peculiarly covered with sparse recumbent white setae. Breuning (1944) established an erroneous synonymy between *M. mixtus* and *M. vastator*, which all British and Australian entomologists overlooked. Afterwards, he described other species showing analogue characters (Breuning 1969; 1979). The examination of the types of *Dihammus bispinosus*, *Acalolepta bispinosipennis*, *A. sumbawana* and *A. savoensis* (Plate 125 figs 3-6) have allowed verifying that these species perfectly correspond to *A. mixta*. The claimed differences in proportion of cheeks, punctation and apical spines are relative characters within the variability of the species, whereas the more or less pubescent aspect of the elytral punctures is a banal consequence of the age of the specimen. Breuning (1979) described *A. savoensis* as coming from “Savo” (Solomon Is.). Actually, the locality label refers “Savu” (Lesser Sunda Islands, Indonesia), correspondingly to the explorations made by Alfred Everett in the Sunda Islands (Boulenger 1897).

Distribution: *A. mixta* is a species with a marked tendency to disperse. Already Gahan (1893) noticed that the species, widespread in Northern Australia and adjacent islands, was also present in the British Museum with specimens coming from Hong Kong and Java. Another specimen has been recently collected in Singapore as well (Loong Fah lgt., image available on www.cerambycoidea.com), strengthening Gahan’s record. *Dihammus bispinosus* was described from Quang-Tri (Vietnam), a locality which Breuning (1944) presumed to be wrong, adding “Australia” as possible native country. On the contrary, a passive anthropogenic introduction was possible, considering the dispersion capability of this species and the fact that Quang-Tri is a coastal region. The main reason of this tendency is that the larvae bore several cultivated plants, including *Theobroma cacao* L. (Aulmann 1912; Breuning 1944) and *Mangifera indica* L. (Chin et al. 2010; Chin & Brown 2015), which probably act as vectors of anthropogenic introduction. Moreover, the species is also related to *Ficus* spp. and *Excoecaria agallocha* L. (Duffy 1963; Hawkeswood 1990; Chin & Brown, 2015), plants widely distributed from India to Australia that



are heavily protected by a milky latex under the bark. Probably, this latex contains the necessary nutrients for the development of larvae (Hawkeswood, 1990) but it might also reduce the competition among the consumers, favouring species able to exploit it (L.F. Cheong in litt.).

According to the verified data, *A. mixta* is widespread in northern and eastern Australia, where it is native, and the Solomon Islands (Bellona). The present-day occurrence in other regions (Hong Kong, Vietnam, Singapore, Java, Sulawesi, Savu and Sumbawa) must be verified. The presence on Lord Howe I. (Breuning 1944; Vitali & Casadio 2007) derives from Olliff (1889) and must be referred to *A. vastator*.

***Acalolepta vastator* (Newman, 1847) bona species** (Fig. 1)

Monohammus vastator Newman, 1847: 1677 (North-eastern Australia); Matthews 1997: 14.

Monohammus rusticator (Fabricius): Aulmann 1912: 19-20, fig. 14; 1913: 20-21, fig. 16 partim?

Monohammus fistulator (Germar): Olliff 1889: 79, 97-98; Froggatt 1919: 37, 39; French 1919: 117-119, figs 1-4; Froggatt 1923: 142, figs 1-4; Froggatt 1930: 6 misidentification?

Haplohammus vastator (Newman): Aurivillius 1917: 27.

Monochamus vastator (Newman): Aurivillius 1921: 99.

Dihammus mixtus (Hope) Breuning 1944: 494 misidentification.

Dihammus vastator (Newman): MacKeown 1947: 122; Duffy 1963: 161-163; Hawkeswood 1990: 101; IHS 2000: 11.

Acalolepta vastator (Newman): Goodwin et al. 1994; Goodwin & Pettit 1994; Hadlington & Johnston 1998: 53; Peláez Rivera et al. 2004: 40; Goodwin 2005: 170-173; Jourdan 2006: 228; Di Mani et al. 2014: 82; Dunn & Zurbo 2014: 7, fig. 16; Mazaheri et al. 2015: 262.

Examined material: None.

Remarks: Newman (1847) introduced *Monohammus vastator* with the following description: "Entirely dark brown, approaching to black, the dorsal surface of the prothorax and elytra being clothed with a short gray pubescence: this pubescence has a mottled appearance, occasioned by the presence of glabrous spots or patches, but as it appears the pubescence is very easily abraded, I cannot venture to decide whether the glabrous markings are natural or caused by causalities. The antennae are very long in the male, exceeding by

one-half the length of the body; the protibiae have a very distinct tooth near the extremity. A number of specimens were taken, some of them very fine, and the males appear to be much larger than the females. Length of the body 1.2 inches [~3 cm], breadth .4 inch [~1 cm]; expansion of the antennae 5½ inches [~14 cm]." The types "were brought over from Australia by Lieutenant M.R. Ince, late of H.M.S. Fly". In all likelihood, H.M.S. Fly is the 18-gun sloop of the Royal Navy that explored much of the Australian North-eastern coast and neighbouring islands and gave the name to the Fly River of Papua New Guinea (Wikipedia). Thus, the typical locality of *M. vastator* must be referred to the North-eastern regions of Australia. The original description contains a mistake since antennae cannot contemporaneously exceed "by one-half the length of the body" and be 14 cm long, if the body is only 3 cm long. However, *A. vastator* shows protibial teeth typical of *Acalolepta rusticatrix* (Fabricius, 1801), a character that led several authors (Aulmann 1912; 1913; Olliff 1889; French 1919; Froggatt 1919; 1923; 1930) to indentify it with this species or with its synonym *Lamia fistulator* Germar, 1824. Breuning (1944) synonymised *A. vastator* with *A. mixta* without checking the types, both preserved in Great Britain and inaccessible to him. Actually, the original descriptions did not suggest this synonymy either since they mention two peculiar characters (the bispinose elytral apices of *A. mixta* and the protibial teeth of *A. vastator*) that make the species unmistakable. Accordingly, British and Australian authors overlooked this synonymy and kept using both names. For a long time, the Passion Vine Longicorn or Fig Longicorn *A. vastator* has been considered a pest of many plants (Duffy 1963; Hawkeswood 1990), especially grapevines (French 1919; Froggatt 1919; Goodwin et al. 1994; Goodwin & Pettit 1994; Peláez Rivera et al. 2004; Goodwin 2005; Di Mani et al. 2014; Dunn & Zurbo 2014; Mazaheri et al. 2015), figs (Froggatt 1923; 1930; Hadlington & Johnston 1998) and papayas (IHS 2000). The literature mentioning "*A. vastator*" is so prevalent that the formal revalidation of the species is even pleonastic; nonetheless, some recent books (e.g. Ślipiński & Escalona 2013) still consider *A. vastator* as a synonym of *A. mixta*. Unfortunately, the typical series seems to be lost: the specimens ranged under *A. mixta* do not include labels saying "*vastator*" or anything in Newman's handwriting. According to Maxwell V.L. Barclay (The Natural History Museum, London, United Kingdom), Newman's collection was dispersed and only a part of it ended up in the British Museum, mostly



via the “Entomological Club” and various private collectors (M. Geiser in litt.). Specimens referable to this species are not present in the Oxford Museum of Natural History either (A.D. Spooner in litt.). However, the habitus of *A. vastator* is clearly different from that of *A. mixta*, as drawings of past authors prove (Aulmann 1912; 1913; French 1919; Froggatt 1923; 1930). Since the type got lost, I designate as the lectotype the specimen figured by French (1919: fig. 4) according to the ICZN, 1999, Art. 74.4 (designation by means of an illustration or description). This designation does not solve the problem of the true identity of this species: the misidentification with other Australian congeners is still very probable. Some of them - *A. aureofusca* (Aurivillius, 1917), *A. aureosericea* (Breuning, 1936) and *A. tenuis* (Breuning, 1938) - are possibly synonyms of *A. vastator*, as well as *A. rusticatrix*, whose exact distribution remains to be defined. Distribution: Due to past misidentifications, the distribution of this species is difficultly traceable. Possibly, it is at least widespread in eastern Australia, Kangaroo Island (Froggatt 1923) and Lord Howe Island (Olliff 1889).

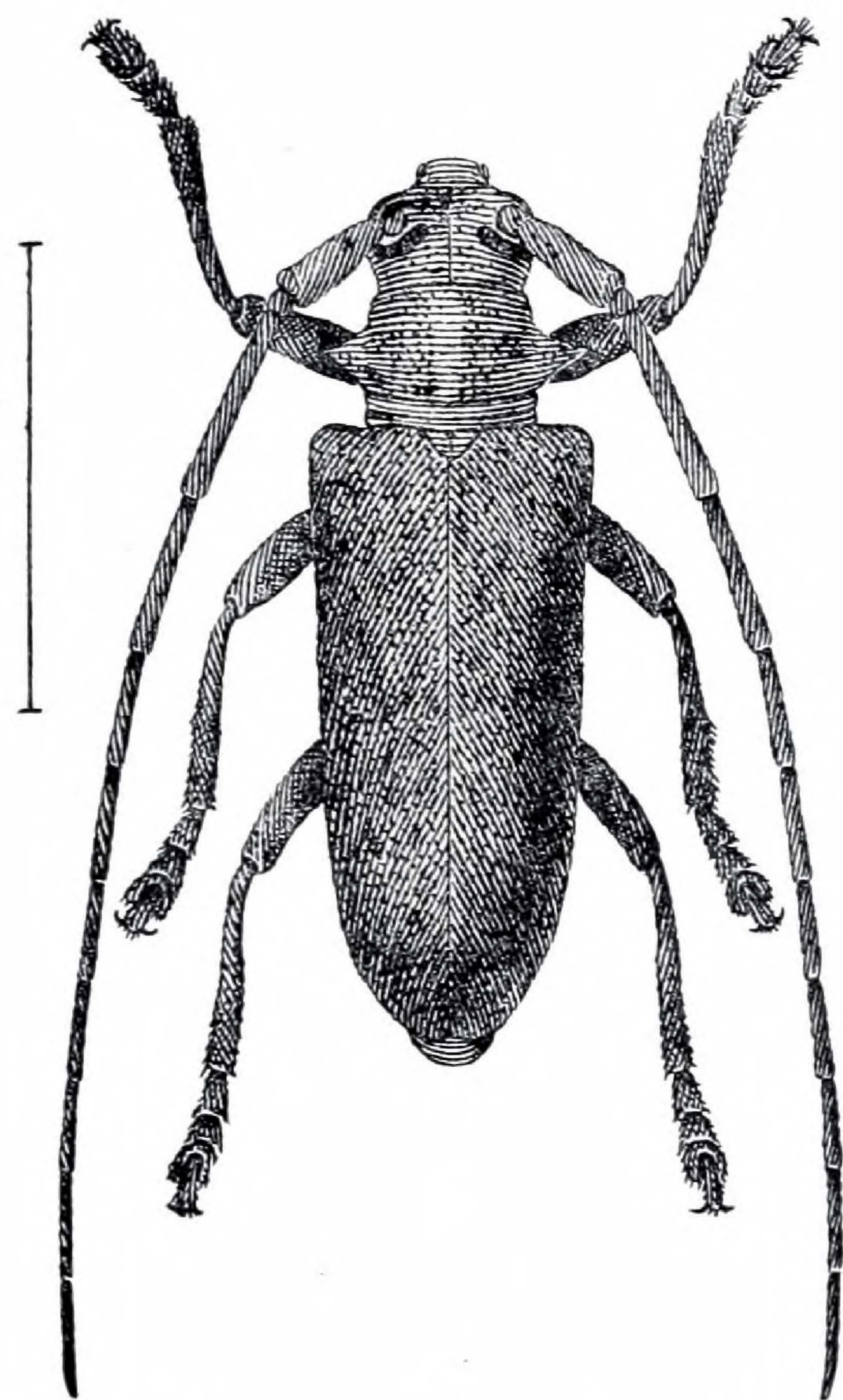


Figure 1. *Acalolepta vastator* (Newman, 1847), iconotype ♀, habitus, dorsal view (scale bar indicates the body length of depicted specimen and corresponds to 1.2 inches or ~3 cm).

Acknowledgements

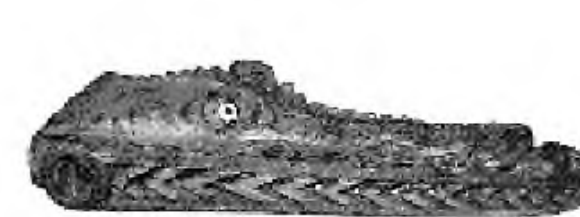
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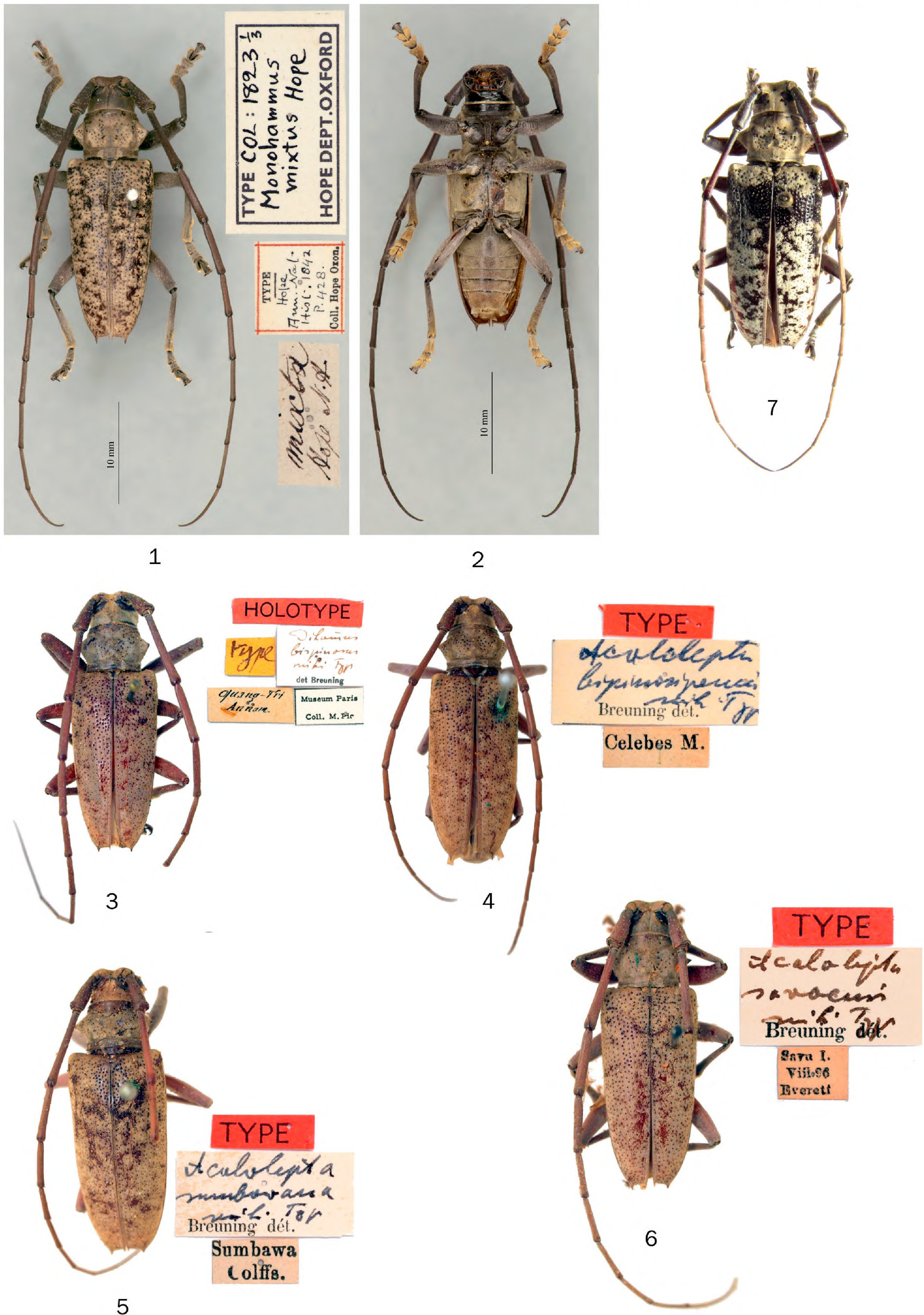
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Plate 125

VITALI, F.: Taxonomic notes on *Acalolepta mixta* (Hope, 1841) and *Acalolepta vastator* (Newman, 1847) ...



Figures 1-7. *Acalolepta mixta* (Hope, 1841), habitus and original labels. 1 – *Monochammus mixtus* Hope, 1841, syntype ♂, habitus, dorsal view; 2 – ditto, ventral view; 3 – *Dihammus bispinosus* Breuning, 1935, holotype ♂; 4 – *Acalolepta bispinosipennis* Breuning, 1969, holotype ♀; 5 – *A. sumbawana* Breuning, 1969, holotype ♀; 6 – *A. savoensis* Breuning, 1979, holotype ♂; 7 – *A. mixta* (Hope, 1841), ♀ from Bellona Island, Solomon Islands.